

# **The Loggerhead**

## **Southeast Asia/Pacific Regional Environment and Health News**

**Q3: 2005**

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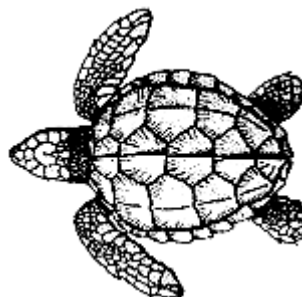
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<http://bangkok.usembassy.gov/embassy/reo.htm>



### **Elephant Landmine Victim Gets Prosthetic Foot**

Motala, a 44-year-old female elephant, lost a foot in 1999 when she stepped on a landmine while working at a logging camp near the Thailand-Burma border. Until now, she's been forced to limp on three legs at the Thai Elephant Conservation Center in Lampang, but her caretakers from the Friends of the Asian Elephant Foundation fitted her with a pre-prosthesis to prepare her for a permanent device in a few months.



### **TRAFFIC Southeast Asia Report on Wildlife Trade**

TRAFFIC Southeast Asia recently published a report, "In Full Swing: An Assessment of Trade in Orangutans and Gibbons on Java and Bali, Indonesia." On Java, and to a lesser extent Bali, gibbons and orangutans are widely kept as pets. The report notes that most of the indigenous Indonesian trade in these primates takes place at bird markets where gibbons and orangutans "can be ordered and delivered within a matter of days or weeks." Because the demand for gibbons and orangutans is generally for pets, hunters target infants and normally kill the mother to obtain her young. The killing of adult females in this way disrupts the breeding of the local population and may well lead to local extinctions.

While the report focused on trade from Sumatra and Kalimantan (Indonesian Borneo) to Java and Bali, it stated that investigations by NGOs claim to "reveal a complex and extensive network of

smugglers working in close cooperation with Customs officials, police and airport personnel” at Sukarno-Hatta international airport in Cengkareng. The report noted the possibility that many of the orangutans discovered at Safari World in 2004 (see orangutan article, below) may have been smuggled directly from Borneo or Sumatra into Thailand.

The TRAFFIC report said that less than ten percent of people that have had gibbons or orangutans confiscated from them were actually prosecuted and that, when prosecuted, they rarely receive maximum penalties allowed under law. Judges do not see wildlife trade or keeping protected species as pets as a serious offense. In Indonesia, the maximum penalty is five years imprisonment and a fine of up to \$12,000 USD, but “more frequently, the offenders are either released or receive a short prison term” and the fines handed out are generally “far below the value of the animals in their possession.” TRAFFIC recommends that “a thorough review of the effectiveness of the legal and jurisdictional system should be conducted” so that law enforcement will actually serve as a deterrent.

### **NGO Spotlight: Wildlife Friends of Thailand**

Wildlife Friends Foundation - Thailand (WFT), an animal rescue center in Petchaburi Province (about 200 kilometers southwest of Bangkok) is dedicated to the rescue and rehabilitation of wild animals that have suffered abuse, malnutrition, neglect, or improper care as pets or used for profit within the tourist industry. The Dutch owner and manager of the center, Edwin Wiek, an outspoken environmentalist, established the center in 2001 with land donated by the Buddhist abbot at adjacent Kao Iook Chang Temple.

Animal Planet ran a 50-minute feature on the center in April 2005, entitled “Animal Lifeline.” Discovery Channel ran a segment on the center in January, and CNN ran a segment on how the center works with the Royal Thai Forestry Police last October during the CITES meetings in Bangkok. In addition, Thai television has run a series of pieces on the center in recent weeks. As a result of all this publicity, WFT has been receiving up to 200 visitors a week, generally on weekends and mostly by Thai nationals.

But this is not a zoo. The center provides the best possible quality of life for the animals that arrive at the center with permanent disabilities and cannot be returned to the wild. Whenever possible, animals are treated for physical injuries and released back into the wild. During a recent visit, REO witnessed a veterinarian setting a gibbon’s broken arm and also saw a Malayan sun bear that had lost a leg to a poacher’s trap. Several gibbons and other primates that have been abused as pets display various emotional problems. The halting, wobbly gait of the single tiger at the center is evidence of permanent brain damage as the result of having nearly starved to death as a cub. WFT has constructed seven islands in a nearby lake as homes for gibbons and has released several animals into nearby Kaeng Krachan National Park.

### **Bangkok’s Safari World Orangutan Scandal**

The primary owner and CEO of Bangkok’s premier zoo, Safari World, was charged in 2004 with violating Thailand’s Customs regulations for illegally importing 57 orangutans. While the case is pending, an employee of the Royal Thai Government’s Department of National Parks, Wildlife, and Plant Conservation keeps watch over the animals as they wait in cages at Safari World while their future is decided. DNA testing done by Bangkok’s Kasetsart University and the Forestry Police confirmed that the 57 orangutans were not the offspring of the zoo’s breeding stock (as Safari World had originally claimed), but could not confirm whether they originated from Indonesia or Malaysia. Although Safari World portrays itself as a sort of animal rescue center, the allegations against it include serious trafficking charges. In Thailand, current penalties for wildlife trafficking are a fine of up to \$1000 USD and sentencing of up to five years in prison. In fact, the fine is insignificant compared to the profits that illegal traders are making, and although there have been many convictions, no one has ever gone to prison in Thailand for wildlife trafficking.

This case provides an interesting backdrop as Thailand prepares to lead ASEAN in the formation of a Southeast Asian environmental law enforcement network this fall.

## Black Market

The beautiful design and compelling text of a new book by Ben Davies makes its important message even more powerful and disturbing. With a forward by Jane Goodall, "Black Market: Inside the Endangered Species Trade in Asia" takes readers through the gruesome world of poaching, trafficking and consumption of Asia's endangered species, part of the illicit global trade worth billions of dollars each year. Poverty, ignorance, greed and strong demand combine to threaten the survival of many of Asia's endangered species. This book explains the challenges of stopping this massive and growing form of international crime and the progress being made by governments and civil society working together.

## Avian Flu Update

The August 5 issue of the journal *Science* describes two new modeling studies that independently came to the same conclusion: rapid and strict intervention in a human outbreak of avian influenza could save millions of lives. Both studies chose Thailand as the putative ground zero, and modeled traditional outbreak responses—such as closing schools, home quarantine and travel restrictions—with the untested new idea of massive prophylactic use of antiviral medication. With diligent surveillance, efficient distribution of antiviral medication, and thousands (or millions) of people in an affected area taking preventive medication, a pandemic could be averted and limited to just a few hundred actual flu cases. Of course, the models make a variety of assumptions that may prove invalid, but even if the probability of success is as low as 20% or 30%, the chance to avert a pandemic would be worth the effort and expense. (See *Science* and *Nature*.)

The United States government has allocated \$25 million to undertake an immediate, coordinated multi-agency program to prevent and control the spread of avian influenza in Southeast Asia. A United States government assessment team recently traveled to the region to discuss with government officials in the region avian influenza preparedness and containment plans.

In the past several weeks, the avian flu virus has spread beyond Southeast Asia. Confirmed cases in birds have occurred recently in Tibet, western China, Mongolia, eastern Russia, and Kazakhstan. Migratory waterfowl appear to be the carriers in this westward spread. No human infections have occurred outside of Southeast Asia, however, and there is no evidence of any sustained human-to-human transmission. Below is a chart from the World Health Organization dated August 5, 2005, showing the number and locations of human avian influenza cases to date:

Country	Cumulative Human H5N1 Cases to Date (Since Dec. 2003)	Most Recent Outbreak (Dec. 2004 to present)	Cases Confirmed This Week
Thailand	17 cases, 12 deaths	0 cases, 0 deaths	0 cases, 0 deaths
Vietnam	90 cases, 40 deaths	63 cases, 20 deaths	0 cases, 0 deaths
Cambodia	4 cases, 4 deaths	4 cases, 4 deaths	0 cases, 0 deaths
Indonesia	1 case, 1 death	1 case, 1 death	0 case, 0 deaths
TOTAL	112 cases, 57 deaths	68 cases, 25 deaths	0 cases, 0 deaths

## Asian Environmental Compliance and Enforcement Network

At a regional workshop August 2-3 in Manila organized by USAID RDM/A, 13 Asian nations launched the new Asian Environmental Compliance and Enforcement Network (AECEN), a regional platform for Asian countries to share experience in developing innovative policies and practices at the national and regional levels. Central to the implementation of AECEN will be country-based pilot activities and regional training initiatives that link closely with related USAID mission programs, as well as technical assistance from the U.S. Environmental Protection

Agency. A number of other donors expressed interest in supporting specific country activities identified at the Manila workshop. To date, the Asian Development Bank has provided significant co-financing for technical assistance. The 13 countries that agreed to establish the network and signed the workshop statement endorsing AECEN are Bangladesh, Cambodia, People's Republic of China, India, Indonesia, Japan, Lao People's Democratic Republic, Pakistan, Philippines, Singapore, Sri Lanka, Thailand, and Vietnam.

## Regional Early Warning System Developments

About 150 representatives from the 27 Indian Ocean countries met in Perth, Australia, August 3-5 to attend the first meeting of the UNESCO Intergovernmental Oceanographic Commission (IOC) group on the Indian Ocean tsunami early warning system. The IO-IGC (Indian Ocean Intergovernmental Coordination Group) was created in June under the IOC to coordinate the creation of an early warning system to protect Indian Ocean nations against tsunamis and other hazards. Participants hope to make significant progress before December 26, 2005, the first anniversary of the tsunami disaster that killed some quarter-million people, but the completed warning system may not be in place for several years.

The Perth meeting focused on technical issues and created working groups for the four major elements of an effective warning system: risk assessments (modeling), hazard-detection, warning dissemination, and public education (see next article). The next IO-IGC meeting will be held in Hyderabad, India, December 14-16.

Officials from the National Oceanic and Atmospheric Administration (NOAA) participated as observers for the United States and as scientific and technical advisers. DART buoys (Deep-ocean Assessment and Reporting of Tsunami), developed by NOAA's Pacific Marine Environmental Laboratory in Seattle, Washington, allow early detection of tsunamis in the open ocean. Today, NOAA operates six DART buoys in the Pacific Ocean, where most tsunamis occur, monitored by the Pacific Tsunami Warning Center in Hawaii. NOAA plans to make DART technology available to the Indian Ocean Tsunami Warning System (IOTWS). An initial design for the IOTWS calls for 15 DART buoys.

NOAA also plans to adapt its TsunamiReady program to develop a tailored tsunami resilience strategy that recognizes the three major categories of communities in the Indian Ocean: large municipalities, small or remote villages and resorts.

## Early Warning System Explained

As an initial step towards establishing an Indian Ocean Tsunami Early Warning System, the IOC is conducting national assessments of capacities and capabilities, establishing a regional plan and preparing to provide technical assistance, training, and technology transfer for the Indian Ocean region. The Loggerhead submits the following two-part article to describe the basic components of a tsunami early warning system:

### Part 1: Tsunami Early Warning System in Layman's Terms

*A tsunami early warning system is composed of four elements:*

- 1) **Risk Assessment:** Advance modeling of coastline communities to determine potential hazard areas and risk probability. Susceptible areas can be targeted for hazard mitigation and warning.
- 2) **Detection:** Observations and monitoring by seismometers, buoys, and other sophisticated equipment detect sub-sea earthquakes or other geological processes to reliably indicate whether a tsunami has been generated. The detection element is the most heavily dependent on international cooperation and technology. Detection and analysis hardware would begin with building upon existing national facilities, creating an international network of seismological stations and coastal tidal gauge stations, and then adding a network of marine



pressure wave gauges. A regional center or centers would be created to receive and analyze data in real time.

- 3) **Warning:** Monitoring institutions issue a warning message via communication centers. National and local officials receive those warnings in threatened nations within minutes. The warning is communicated to the local at-risk population via sirens, mass media, specialized radio systems, and other notification technologies. The initial part of the warning element is also dependent on international cooperation and technology. The regional center(s) need to be able to communicate warnings immediately to network members, which will require integrated communication equipment. Also, there needs to be an agreed upon set of rules for when a tsunami warning should be issued.
- 4) **Education and Response:** A local response plan exists and is activated. Clearly, the response plan must be developed well in advance of the hazard event and must be communicated to the public. The public must respond appropriately, having been prepared and educated in advance.

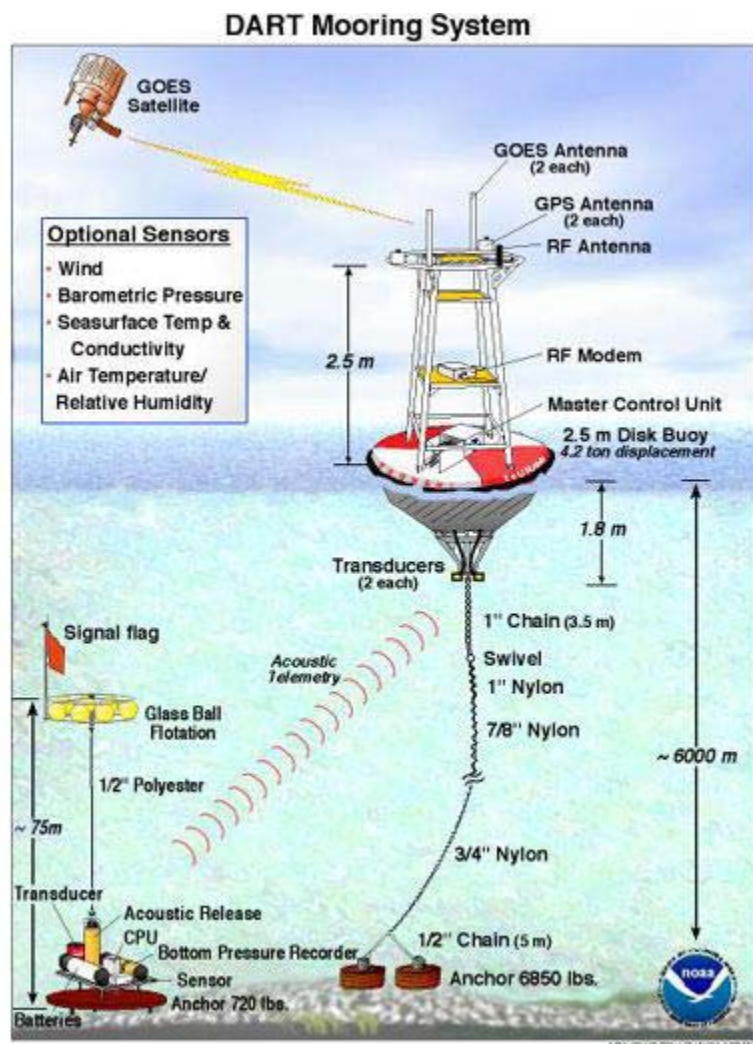
## Part 2: The technology used to make real-time tsunami predictions and issue warnings

DART (Deep-ocean Assessment and Reporting of Tsunamis) buoys, more correctly termed "DART stations," are a new technology that is just transitioning from research to operations and therefore are still manufactured by hand in very small quantities by NOAA with very long lead times. There is no DART station assembly plant. Since they were introduced in 2001, NOAA has deployed only six DART stations in the world—three off the Alaskan coast, two off the western U.S. coast, and one southeast of Hawaii. The U.S. plans to expand its own DART station system by 32 more units.

NOAA has applied for a patent for its DART station system, and plans to license the technology so that the production demands can meet both U.S. domestic and international needs. DART stations will not be available to any country that desires to purchase them; instead, NOAA is working with the IOC to determine the most scientifically significant sites for DART stations in the Indian Ocean so that the limited number of stations will provide the most benefit to all the countries of the region.

DART stations are anchored sea-floor pressure gauges connected to a moored surface buoy.

The existence of tsunami waves following an earthquake can be predicted and ultimately



Courtesy of PMEL

confirmed by integrating data from the following sources:

- 1) Seismometers, which detect and measure the location and magnitude of earthquakes
- 2) Sea-floor pressure gauges, which measure changes in water pressure
- 3) Surface buoys, which detect changes in ocean surface water movement
- 4) Sea-level gauges (tide gauges), which measure changes in water levels
- 5) Communications systems for integrating data from the various detection equipment

The Japanese and others use a system of sea-floor pressure gauges anchored and attached to cables on the sea bed, rather than DART stations. DART stations are known and proven. Their reliability is enhanced in the second generation design that includes two-way communication. The station platform affords the opportunity for multi-functionality. The network is substantially lower cost than the Japanese system and should be more extensible and affordable to sustain as part of the integrated ocean/coastal observing system.

Even with the most advanced technology, however, the generated data must be run through complex mathematical computations based on computer models and may still yield imprecise results. The challenge to issuing tsunami warnings, according to Dr. Chip McCreery, Director of NOAA's Pacific Tsunami Warning Center in Hawaii, is to err on the side of caution without sending out too many false alarms.

## Upcoming Events

- 16th Pacific Regional Environmental Program Meeting, Apia, September 12-16  
[www.sprep.org.ws](http://www.sprep.org.ws)
- USG Indian Ocean Tsunami Warning System Program Planning and Coordination Workshop, Bangkok, September 12-14 [www.usaid.gov/press/releases/2005/pr050817.html](http://www.usaid.gov/press/releases/2005/pr050817.html)
- Second APEC Ocean-related Ministerial Meeting, Bali, September 16-17 [www.aomm2.dkp.go.id](http://www.aomm2.dkp.go.id)
- Southeast Asia Seismic Response Conference, Honolulu, September 26-28
- The Ocean Policy Summit, Lisbon, October 10-14 [www.globaloceans.org](http://www.globaloceans.org)
- 36th Pacific Islands Forum and 17th Post-Forum Dialogue Partners Meeting, Port Moresby, October 25-29 [www.forumsec.org.fj](http://www.forumsec.org.fj)
- ICRI General Meeting, Koror, October 31 – November 2 [www.icriforum.org](http://www.icriforum.org)
- US Coral Reef Task Force Meeting, Koror, November 5-7 [www.coralreef.gov](http://www.coralreef.gov)
- Stopping the Illegal Wildlife Trade in Southeast Asia, Khao Yai National Park, November 6-10
- Southeast Asia Environmental Law Enforcement Ministerial, Bangkok, November 28-30

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